To our customers,

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

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DATA SHEET

RENESAS

E.S.D NOISE CLIPPING DIODES

NNCD6.2MF

LOW CAPACITANCE HIGH ESD TYPE ELECTROSTATIC DISCHARGE NOISE CLIPPING DIODES (DUAL TYPE: COMMON ANODE) 3-PIN MINI MOLD

This product is a low capacitance type diode developed for E.S.D. (Electrostatic Discharge) protection. Based on the IEC61000-4-2 test on electromagnetic interference (EMI), the diode assures an endurance of no less than 30 kV, and capacitance is small with 20 pF TYP. This product series is the most suitable for the ESD protection in the high-speed data communication bus such as USB.

NNCD6.2MF include two elements in 3-PIN Mini Mold Package having allowable power dissipation of 200 mW.

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FEATURES

- Based on the electrostatic discharge immunity test (IEC61000-4-2), the product assures the minimum endurance of 30 kV.
- Capacitance is small with 20 pF TYP. (at V_R = 0 V, f = 1 MHz). It is excellent in the frequency characteristic.

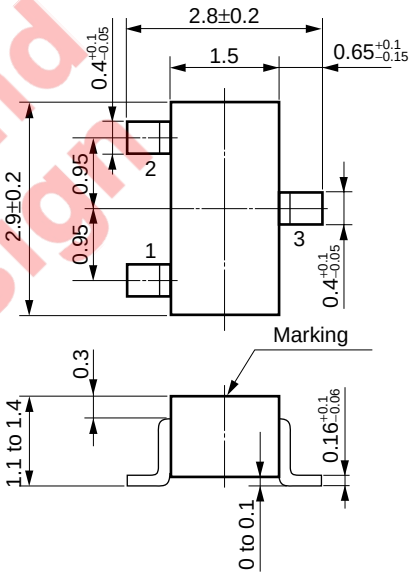
APPLICATIONS

- External interface circuit E.S.D. protection in the high-speed data communication bus such as USB.

MAXIMUM RATINGS (T_A = 25°C)

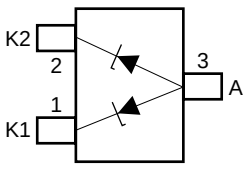
Power Dissipation	P	200 mW (Total)
Surge Reverse Power	P_{RSM}	2 W (t = 10 μs 1 pulse) Fig.5
Junction Temperature	T_j	150°C
Storage Temperature	T_{stg}	–55°C to +150°C

PACKAGE DIMENSIONS (in millimeters)



PIN CONNECTION

1. K1 : Cathode 1 SC-59 (EIAJ)
2. K2 : Cathode 2
3. A : Anode (common)



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ELECTRICAL CHARACTERISTICS (T_A = 25°C) (A-K1, A-K2)

Type No.	Breakdown Voltage[Note 1] V_{BR} (V)			Dynamic[Note 2] Impedance Z_Z (Ω)		Reverse Leakage I_R (μA)		Capacitance C_t (pF)		E.S.D Voltage (kV)	
	MIN.	MAX.	I_T (mA)	MAX.	I_T (mA)	MAX.	V_R (V)	TYP.	TEST CONDITION	MIN.	TEST CONDITION
NNCD6.2MF	5.7	6.7	5	50	5	2	3.0	20	V_R = 0 V f = 1 MHz	30	C = 150 pF R = 330 Ω (IEC61000-4-2)

Note 1. Tested with pulse (40 ms)

2. Z_Z is measured at I_T give a small A.C. signal.

TYPICAL CHARACTERISTICS (T_A = 25°C)

Fig. 1 POWER DISSIPATION vs. AMBIENT TEMPERATURE

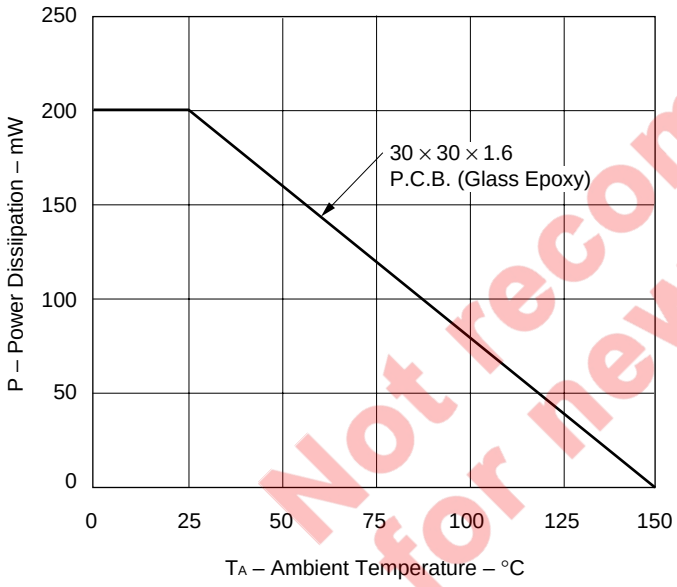
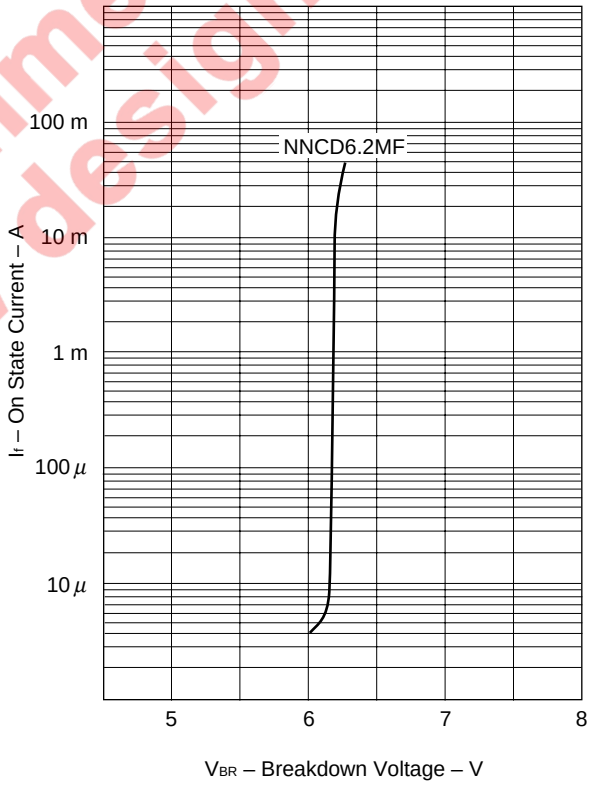


Fig. 2 I_T vs. V_{BR} CHARACTERISTICS



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Fig. 3 C_t-V_R CHARACTERISTICS

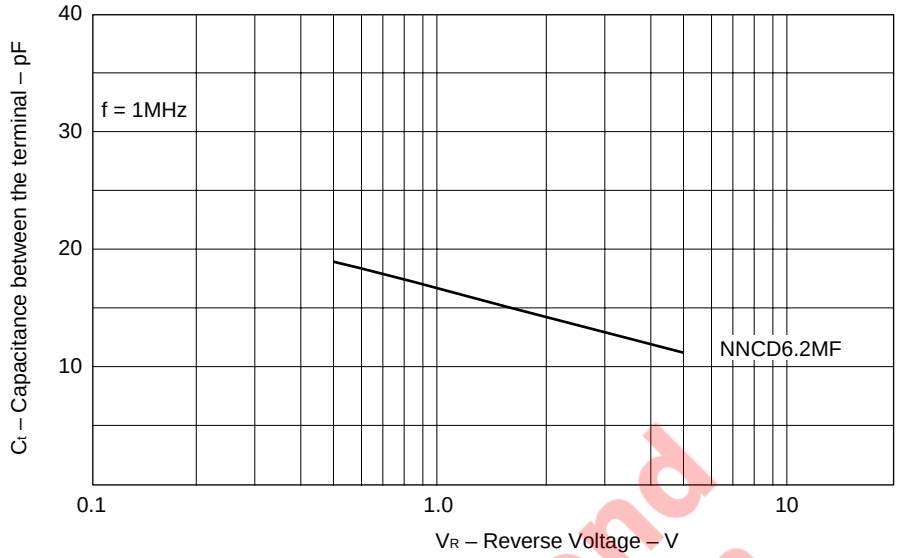
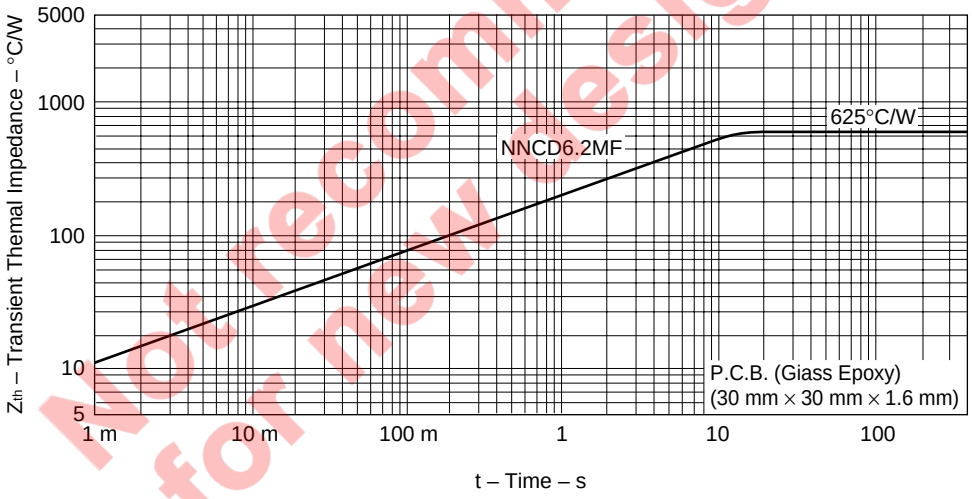
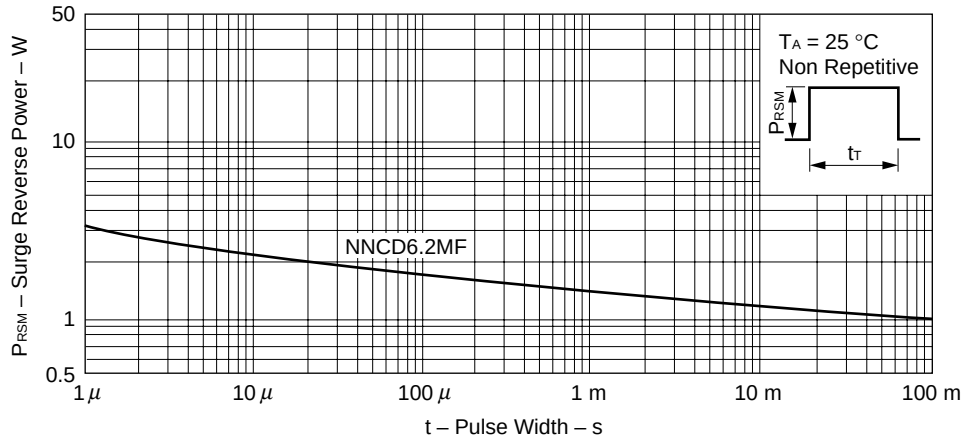


Fig. 4 TRANSIENT THERMAL IMPEADANCE CHARACTERISTIC



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Fig. 5 SURGE REVERSE POWER RATINGS



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